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ABSTRACT

A study examined use of passive and antipassive constructions in the spontaneous utterances and picture comprehension responses of young speakers of Quiche Mayan, aged 1-5. This usage was compared with use of similar constructions in English-speaking children. Quiche-speakers' usage was found to be precocious in comparison with English-speakers' usage in three senses: (1) Quiche children use non-active sentences much more frequently in daily conversations, reflecting the high frequency of these sentences in adult Quiche and suggesting that there is nothing inherently more difficult about these constructions; (2) Quiche children show early symmetry in their acquisition of the passive and antipassive voices, directly contradicting acquisition theories that appeal to canonical linking rules and noun-phrase-movement to explain late acquisition of passives in English; and (3) Quiche children are precocious in their production and comprehension of nonactional verbs in nonactive voices, perhaps reflecting a little-understood aspect of the structure of the adult language. (MSE)

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Precocious Passives (and Antipassives) in Quiche Mayan

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The passive construction in English has long had a key role in the development of linguistic theory. This is hardly surprising given the way passives change the mapping between semantic roles and grammatical relations. It is the premiere example of the fact that grammatical relations are not isomorphic with any single semantic role. The role-changing aspect of passives has also meant that studies of its acquisition could potentially determine the extent to which children initially base their grammars on semantic or syntactic categories and relations. Unfortunately, theoretical interest in the acquisition of passives is not matched by parental enthusiasm in providing examples of passive sentences to children learning English. Researchers have had to devise techniques for teaching passives to English-speaking children to see what they could do. Their results reflect both the capacity of children to acquire passives and refinements in the techniques used to elicit responses from young children. There are languages, though, where passive constructions appear fairly frequently in everyday conversation and where children are exposed to passive sentences from birth (cf. Demuth 1988, Savasir 1983, Suzman 1985, 1987). Acquisition studies in such languages may provide new insights into children's capacity for learning grammatical structure.

I have been studying the acquisition of the Mayan language Quiche for some time now. Quiche is spoken by more than a half million people living in the Western Highland region of Guatemala. Sentences in various voices appear in Quiche speech to children, although sentences in the active voice predominate. In this paper I present the morphology of voice marking in Quiche together with data from samples of spontaneous speech and comprehension tests. I also discuss some implications of the Quiche results for current accounts of the acquisition of passives.

1. Quiche Voice Morphology

1.1. Active voice

Two features determine the form of Quiche verbs in the active voice: transitivity and derivation. Root transitive and intransitive verbs are monosyllabic while derived transitive verbs end in a vowel. The general form of these verbs and some examples are shown below:

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Aspect-(Obj)-Subj-Root-Termination

Root	k	- at	- inw	- il	- oh	
Transitive	incomp	2nd	1st	see	Term	'I see you.'
Derived	k	- at	- in	- q'aluu-x		
Transitive	incomp	2nd	1st	hug	Term	'I hug you.'
Root	k	-	at	- kam	- ik	
Intransitive	incomp		2nd	die	Term	'You are dying.'

The agreement markers are obligatory on both transitive and intransitive verbs. An ergative set of person markers is used to mark subject agreement on transitive verbs while an absolutive set of person markers indicates the object of transitive verbs and the subject of intransitive verbs (Pye 1980a). The final suffix on the verbs is the termination marker. The form of the termination marker depends on whether the verb is transitive or intransitive, root transitive or derived transitive, and in clause-medial or clause-final position (Mondloch 1978a, Pye 1983). Thus, the termination marker serves as a key indicator of a verb's transitivity.

1.2. Passive voice

Quiche has two distinct forms of the passive voice (Mondloch 1981). Passive$_1$ adds an intransitivizing marker /-ʃ/ to derived transitive verbs and lengthens the vowel of most root transitive verbs. The resulting verb only marks agreement with a syntactic subject (the logical object), and takes the intransitive forms of the Termination, e.g.

k-in-tsuku-ʃ-ik 'I am looked for.'
k-at-ch'aay-ik 'You are hit.'

Passive$_1$ allows the demoted agent to be expressed obliquely in a phrase headed by the relational noun *-umaal* (similar to prepositions), e.g.

ʃinch'aay r-umaal lal Mari7y 'I was hit by Mary.'

Passive$_1$ does not permit 1st or 2nd person agents to be expressed obliquely in this fashion.

Passive$_2$ adds the intransitivizing marker /-tax/ to both root and derived transitive verbs. The resulting verb only marks agreement with its subject, and takes intransitive Termination forms, e.g.

k-at-tsuku-tax-ik 'You are looked for.'
k-in-ch'ay-tax-ik 'I am hit.'

There is a subtle semantic distinction between the two passives. Passive$_2$ emphasizes the resulting state of the patient or the successful completion of the action. It also allows the demoted agent to be expressed in an oblique phrase headed by the relational noun *-umaal*. First and second person agents may appear in this phrase with Passive$_2$.

1.3. Antipassive

Antipassive constructions provide a means of emphasizing the role of the subject. In an antipassive the object is demoted to an oblique position or remains unexpressed. Quiche also has two distinct antipassive constructions. The Agentive form adds the intransitivizing suffix /-ow/ to monosyllabic transitive verbs and /-n/ to polysyllabic transitive verbs, e.g.

k-in-tsuku-n-ik 'I look for.'
k-at-ch'ay-ow-ik 'You hit.'

The Agentive voice emphasizes the subject or agent of the action. The verb becomes intransitive, agreeing with the logical subject and taking the intransitive Termination. The Agentive form is obligatory when the agent is advanced by Question formation, Relative clauses, or Focus.
The Agentive must have a subject or object in the 3rd person in its underlying form. Agreement in Agentive verbs follows the person hierarchy: 1,2 > 3 pl. > 3 sing. That is, if one of the actors is a 1st or 2nd person, the Agentive verb will agree with that actor, regardless of whether or not it is the logical subject.

The Absolutive emphasizes the verb's action. It adds the intransitivizer /-an/ to root transitive verbs. The absolutive form of derived transitive verbs is the same as the agentive, e.g.

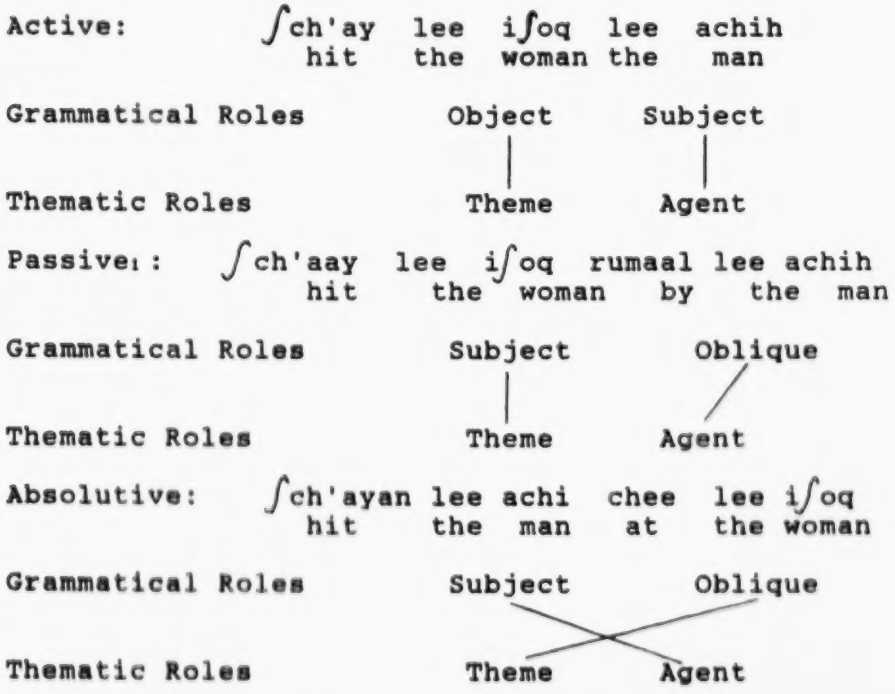
k-in-ch'ax-an-ik 'I wash.' or 'I wash myself.'
k-at-tsuku-n-ik 'You look for.'

Again the resulting verb agrees with the logical subject and takes the intransitive termination. The demoted object may be expressed in an oblique phrase headed by the relational noun *ch-ee(ch)*, e.g.

ʃ-0-ch'ay-an lee achih ch-ee lee iʃoq
comp.-3A-hit-abs the man on the woman
'The man was hitting on the woman.'

2. Theoretical Digression

Antipassive constructions are regarded as the hallmark of ergative languages, and it is no accident that they appear in Quiche. However, the presence of both passive and antipassive constructions in the same language has interesting implications for theoretical accounts of language acquisition. Consider the effect these constructions have upon the links between semantic roles and syntactic relations. The canonical links between semantic and syntactic roles should be defined by sentences in the active voice. The Quiche passive does not actually involve crossed linkages due to the unmarked word order for active sentences. Thus, if canonical linking rules are defined with respect to the unmarked word order of sentences in the active voice, a simple factor of surface word order should play a significant role in determining the relative ease of passive acquisition across languages. In comparison, the antipassive construction in Quiche requires crossed linkages, so it should be acquired later than the active and passive voices.



Other theoretical approaches would not fair much better. GB accounts of the passive, for example, revolve around the externalization of the object's θ-role (Chomsky 1981). This becomes possible in passive sentences because

the subject's θ-role is absorbed by the passive morpheme and the verb no longer assigns Case to the object position. However, this framework does not provide any insights into antipassive constructions which on the surface would seem to involve the same principles of θ-role absorption and Case assignment. The theory does not explain why the passive morpheme absorbs the subject's θ-role while the antipassive morpheme absorbs the object's. Moreover the framework leads to the same differentiation of passive and antipassive structures. Borer & Wexler (1987), to cite one example in this framework, propose that verbal passives are absent in English children's early speech essentially because they require np-movement. Verbal antipassives, however, do not entail np-movement. Thus, their theory would predict Quiche children should acquire active and antipassive sentences equally easily, and both should appear before passives.

3. Voice forms in Quiche children's spontaneous utterances

Although the overwhelming majority of children's utterances are in the Active voice, they begin using the other voices when they are 2 years old. My data comes from recordings of children's conversations that I made in the course of my dissertation research (Pye 1980b). These data can best be compared with data on passives in English published in an article by Pinker, Lebeaux & Frost (1987). The Quiche and English production data are summarized below:

<u>English (from Pinker, Lebeaux & Frost 1987)</u>

Children	Ages	MLU	Hours Recorded	No. of Passives
Adam	2;3-4;11	2.00-5.20	110	72
Eve	1;6-2;3	1.50-4.26	40	10
Sarah	2;3-5;1	1.74-4.10	139	32
Allison	1;5-2;10	1.73	4	2
<u>Quiche</u>				
Al Tiyaan	2;1-2;10	1.07-3.30	16	19
Al Chaay	2;9-3;6	1.57-4.31	24	99
A Carlos	3;0-3;10	1.59-3.69	20	68

The English data is somewhat exaggerated. Pinker et al. state that they used a very "liberal" definition for passives that included both adjectives (*named, crowded, mixed up*) and possible cases of the simple past tense ('It's stopped in the sky'). In contrast the Quiche data is an underestimate. I have not been able to thoroughly review my

transcripts. Still the Quiche children probably produce sentences in a nonactive voice 8 times as often as the English children. They produced a variety of verbs in different voices and began producing passive and antipassive sentences at the same time. They also used many of these verbs in the active voice, an indication that they had not learned just another intransitive verb, but were aware of the alternation between the different voices. Nonactional verbs such as ***say***, ***forget***, ***cure***, ***buy***, ***write***, ***scare***, and ***hear*** also appear in the children's early conversations. While most of the children's nonactive sentences are truncated there are several examples of full passives.

4. Comprehension testing

While the production data suggests that Quiche children can produce nonactive verb forms at an early age, it does not show that they are able to process the nonactive morphology grammatically. They might instead be using limited scope formulae to produce nonactive verb forms in semantically-restricted contexts. Thus, some experimental procedure is necessary in order to evaluate the productivity of the children's nonactive voice forms.

This past summer I did an experiment to test Quiche children's comprehension of sentences in the active, passive and Agentive voices. I also wanted to see if it made any difference whether the verbs were actional or nonactional in Maratsos et al. (1983) terms. I put together two lists of verbs to test: 1. Actional (***puyiix*** 'push', ***q'aluux*** 'hug', ***ch'ay*** 'hit', ***ti7*** 'bite', ***eqaax*** 'carry', ***t'op*** 'peck', ***esaax*** 'take out', ***chap*** 'grab', ***riq'*** 'lick') and 2. Nonactional (***ʃib'iix*** 'scare', ***il*** 'see', ***siq*** 'smell', ***tarane7x*** 'follow', ***tsukuux*** 'look for', ***sik'iix*** 'call', ***iye7x*** 'wait for', ***riq*** 'find', ***k'ol*** 'guard'). Operationally, I defined a verb as actional if the two participants were touching. I tried to balance the number of monosyllabic and polysyllabic verbs in each set, the number of vowel-initial verb stems, and the general phonological characteristics of each set.

I used a picture identification task with sentences in the active and passive voices. I drew a picture illustrating each action on a cardboard card roughly 4x6 inches. I used a variety of animals as agents and patients to insure that animacy would not be a cue for the subject. My Quiche associate, Pedro Quixtan Poz, let me know when my concept of a particular action did not match his. I discovered such things as Quiche chickens peck heads - not tails, and while cats find rats under baskets, rats find cats in baskets.

We began each session with pictures of a horse, a cow and a pig. We named each animal for the child and then

asked the child to point to one or another of the pictures. None of the subjects had any difficulty in this phase of the task. We then presented each set of 3 cards to the children in different orders and in different arrangements from left to right. There were 36 sets in all (18 verbs x 2 voices). Two of the pictures in the set depicted the same action, but with the actors reversed. The third picture showed a different action, but had the same actors. We pointed out the animals in each picture and made sure the child knew their names. We then asked the child to identify the picture showing the chicken pushing the rat in the active voice. More specifically, we would say to each child, "Where is the chicken pushing the rat? Can you show us? The chicken pushing the rat. Show us." In the passive test we asked each child, "Where is the chicken being pushed by the rat? Can you show us? The chicken being pushed by the rat. Show us."

I only had six weeks in Guatemala to design the experiments and test children. Our results for the 4 and 5-year-olds are shown in the following table, which also shows the results from Maratsos et al. for English:

Quiche Fours and Fives, Chance = .333

Active (n=7)		Passive (n=10)	
Actional	Nonactional	Actional	Nonactional
.333	.306	.467 (p=.036)	.443 (p=.066)

English Maratsos, Fox, Becker, & Chalkley 1983, Chance = .50

Active (n=38)		Passive (n=38)	
Actional	Mental	Actional	Mental
.89 (p < .001)	.88 (p < .001)	.67 (p=.001)	.40

There are a score of methodological differences between the two studies that make direct comparison impossible. I used different sets of verbs and I didn't reject any subjects, no matter how poorly they might be doing on the picture identification task. Nevertheless these results suggest some interesting differences between the two groups of children. English-speaking children have no trouble responding to sentences in the active voice, whereas the Quiche children responded at chance levels to these sentences. English-speaking children have trouble interpreting passive sentences with mental verbs whereas there is no statistical difference between the Quiche

children's response to passive sentences with actional and nonactional verbs. The data on individual verbs shows that the nonactional verbs were not clustered at the bottom of the response scores, but were interspersed with the actional verbs. Quiche children were as likely to interpret a passive sentence with *see* correctly as they were a sentence with *push*. Thus, I would argue that comprehension testing shows two surprising findings for the Quiche children: 1. They do not comprehend sentences in the active voice, and 2. They comprehend passive sentences with nonactional verbs almost as well as they comprehend passives with actional verbs.

The results for Quiche sentences in the active voice reveal the effect language structure can have on experiments. Active voice sentences with two third person participants are ambiguous in the adult language. Mondloch (1978b) reviews the grammatical devices Quiche speakers use to avoid just the sentences I used in the active voice experiment. Prominent among the devices are alternations in voice. A passive or antipassive sentence disambiguates two third person participants by using an agreement marker on the verb for only one of the participants. The experimental condition happened to be one context in which the structure of Quiche favors responses to sentences in the passive voice.

5. Conclusion

In what sense are the Quiche children precocious users of passive and antipassive constructions? First, Quiche children use nonactive sentences much more frequently than their English-speaking counterparts in daily conversation. This result suggests that there is nothing about the structure of nonactive sentences that makes them inherently more difficult for children to produce. Children's production of nonactive sentences merely reflects the frequency of nonactive sentences in the adult language. If the adult language requires nonactive sentences for particular pragmatic or discourse functions then children acquiring the language will use nonactive sentences in these contexts. Languages in which nonactive sentences predominate (as claimed for some Indonesian and Australian Aboriginal languages) should have learners who produce nonactive sentences earlier than active sentences.

Secondly, the Quiche children are precocious in demonstrating a symmetry between their acquisition of the passive and antipassive voices. This symmetry directly contradicts acquisition theories which appeal to canonical linking rules or np-movement to explain the late acquisition of passives in English. Acquisition theory must take into

consideration the existence of languages like Quiche which contain both passive and antipassive structures in order to address the full range of voice change in human languages.

Finally, the Quiche children are precocious in their production and comprehension of nonactional verbs in nonactive voices. Again the explanation may lie in the structure of the adult language. The results from children learning English show that the children discriminate between two sets of verbs. We do not know whether the basis for this distinction is one of action versus nonaction, active versus stative or some other yet unknown dimension (Brown 1973:321 mentions a voluntary-involuntary distinction). The nonactional verbs in Quiche, however, are every bit as active as their actional counterparts. It is perfectly grammatical in Quiche to use the progressive aspect and imperative mood with any transitive verb, including *want*, *see*, and *know*. This suggests that the English result reflects children's hesitancy to cross a distinction that plays a prominent role in the adult language. If this is, in fact, the explanation for the English result, it is an extremely interesting example of children's willingness to overgeneralize a distinction beyond its appropriate domain of application.

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